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APPLICATION NO.	FILED DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,229	04/06/2001	Zvia Agur	Q63893	7712
7590	05/18/2004	EXAMINER		
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 PENNSYLVANIA AVENUE, N.W. WASHINGTON, DC 20037-3213			MORAN, MARJORIE A	
ART UNIT		PAPER NUMBER		1631

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/827,229	<b>Applicant(s)</b> AGUR ET AL.
	<b>Examiner</b> Marjorie A. Moran	<b>Art Unit</b> 1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.

- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 08 March 2004.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 66-117 and 332-349 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 66-75,77-78, 80-81,83,85-91 and 332-337 is/are allowed.

6) Claim(s) 76,82,84,92-100,102,108,110,114,117 and 338-349 is/are rejected.

7) Claim(s) 79,101,103-107,109,111-113,115 and 116 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 08 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____.
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***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/8/04 has been entered.

Claims 66-117 and 332-349 are pending. In view of the arguments filed 1/6/04, the new matter rejection of claims 92-117 and 341-349 made under 35 USC 112 is hereby withdrawn. In view of the amendment filed 3/8/04, rejections of the claims made under 35 USC 112, second paragraph are hereby withdrawn. All other objections and rejections not reiterated below are hereby withdrawn.

***Information Disclosure Statement***

The IDS filed 7/8/03 has been considered in part. An explanation of nonconsidered references and a copy of the IDS indicating considered references was mailed with the Advisory Action of 1/22/04.

***Drawings***

Proposed amended drawings were received on 3/8/04. The renumbering of the drawings is acceptable to the examiner. However, Figures 7 and 8 now have no Figure legends and are therefore incomprehensible as the data represented therein is not identified anywhere. Applicant has not proposed replacing the original color references with any other identification of data which would render the Figures comprehensible, therefore Figures 7 and 8 are objected to.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

Claims 79 and 105 are objected to because of the following informalities. Claims 79 and 105, each in line 3, recites “below the threshold”. The “predetermined threshold level” of line 2 of each claim is interpreted to be the antecedent basis for “the threshold” of line 3. However, the claims are grammatically awkward. For better clarity, the examiner recommends amending the phrase “below the threshold” to --when the TPO concentration is below the predetermined threshold level, -- in each claim. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 76, 82, 84, 98-99, 102, 108, 110, 117, 338-340, and 347-349 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 76 and 102 recite “computations that include an effect of apoptosis”, but do not recite what the apoptosis affects; i.e. affect on what? As it is unclear what the computations are intended to include, the claims are indefinite.

Claims 82 and 108 recite the phrase “the threshold”, each in line 2. There is no antecedent basis for this term in the claims, therefore the claims are indefinite. It is noted that

claims 79 and 105 recites a “predetermined threshold level” for TPO; however, claims 82 and 108 do not depend from either of these claims.

Claims 84 and 110 recite that a fraction of cells which commit to a particular lineage be “dependent on TPO”. It is unclear if applicant intends the fraction size to be dependent on TPO, or intends the ‘act’ of committing to a lineage to be dependent on TPO, therefore the claims are indefinite. Further, it is unclear if the “dependence” is intended to be on the mere presence, some activity, or a concentration of TPO, therefore the claims are further indefinite.

Claims 98, 338, and 347 recite that a process model comprises “administration of TPO” to a patient. It is unclear what limitation of the model or system applicant intends by a physical step of administering a drug, therefore the claims are indefinite.

Claims 117, 340, and 349 recite “the modified system model” in the last line of each claim. There is no antecedent basis for this phrase in the claims, therefore the claim is indefinite. With regard to claims 117 and 349, it is noted that no step or means for modifying a model is recited in a parent claim. Further, parent claims 92 and 342 recite a process model, not a system model. With regard to claim 338, it is noted that parent claims 332-333 recite modifying a *process* model.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 92-94, 97, 100, 114, 341-343, and 346 are rejected under 35 U.S.C. 103(a) as being unpatentable over WICHMANN et al. (Cell Tissue Kinetics (1979) vol. 12, pp. 551-567) in view of THOMAS (US 5,879,673).

Applicant's arguments filed 1/6/04 and 3/8/04 have been fully considered but are not persuasive. In response to the argument that the combination of WICHMANN and THOMAS would not "work" because THOMAS teaches animal experiments whereas WICHMANN teaches mathematical/computer models, it is noted that THOMAS is relied upon for a teaching that animal models maybe used to formulate human models, not for a teaching of a particular model. As THOMAS teaches that models of thrombopoiesis in rodents are "translatable" into human beings; i.e. may be used to model the same disorder/disease in humans, the examiner maintains that one skilled in the art would reasonably have expected success in using WICHMANN's system and method to model thrombocytopenia in humans as well as rats. In response to the arguments presented in the response of 1/6/04 regarding various differences between humans and rats, it is noted that limitations reflecting these differences are not recited in the rejected claims. For example, the claims do not limit platelet release to occur in lungs;

there are no limitations with regard to kinetics, receptor density etc. in the instant claims.

Further, it is noted that WICHMANN teaches cell movement through compartments.

For the reasons previously set forth and set forth above, the rejection is maintained.

Claims 92-96, 100 and 341-345 are 35 U.S.C. 103(a) as being unpatentable over KLIEM et al. (Experimental Hematology (1997) vol. 25 (8), pp.899) in view of THOMAS (US 5,879,673).

Applicant's arguments filed 1/6/04 and 3/8/04 have been fully considered but are not persuasive. In response to the argument that the combination of KLIEM and THOMAS would not "work" because THOMAS teaches animal experiments whereas KLIEM teaches mathematical/computer models, it is noted that THOMAS is relied upon for a teaching that animal models maybe used to formulate human models, not for a teaching of a particular model. As THOMAS teaches that models of thrombopoiesis in rodents are "translatable" into human beings; i.e. may be used to model the same disorder/disease in humans, the examiner maintains that one skilled in the art would reasonably have expected success in using KLIEM's system and method to model thrombocytopenia in humans as well as mice. In response to the argument that KLIEM points to "gaps in knowledge about thrombopoiesis in general", it is noted that KLIEM also teaches that his model and system "show very good quantitative agreement with experimental data", thus confirming that his model may successfully be used to predict cellular behavior in thrombopoietic animals.

For the reasons previously set forth and set forth above, the rejection is maintained.

***Claim Objections***

Claims 101, 103-107, 109, 111-113 and 115-116 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. It is noted that claims 102, 108, and 110 depend from claim 101 and are free of the prior art for the same reasons set forth below.

***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance.

The prior art does not teach or fairly suggest a model or system for modeling thrombopoietic lineage in an individual comprising a process model for cells involved in thrombopoiesis wherein the process model is modified based on parameters specific to the individual, as recited in claims 66 and 332.

The following is a statement of reasons for the indication of allowable subject matter.

The prior art does not teach or fairly suggest a system or method for modeling thrombopoietic lineage in a general human patient wherein a process model comprises the particular compartments recited in claim 101, or wherein cells pass between compartments each hour, as in claim 115.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

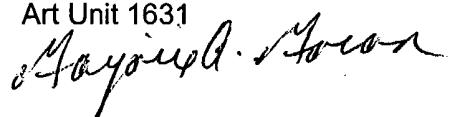
Claims 66-75, 77-78, 80-81, 83, 85-91, and 332-337 are allowed. Claims 76, 82, 84, 92-100, 102, 108, 110, 114, 117, 338-349 are rejected, and claims 79, 101, 103-107, 109, 111-113, and 115-116 are objected to.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (571) 272-0720. The examiner can normally be reached on Mon. to Wed, 7:30-4; Thurs 7:30-6; Fri 7-1 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (571)272-0722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marjorie A. Moran  
Primary Examiner  
Art Unit 1631



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